REMARKS

The Office Action dated May 7, 2007 has been received and carefully noted. The above amendments to the Abstract and the claims, and the following remarks, are submitted as a full and complete response thereto.

By this response, claim 1-4 have been amended to more particularly point out and distinctly claim the subject matter of the invention, and claims 5-7 have been added. No new matter has been added. Support for the above amendments is provided in the Specification on at least pages 3-8. Accordingly, claims 1-7 are currently pending in the application, of which claims 1, 3, and 6 are independent claims.

In view of the above amendments and the following remarks, Applicant respectfully requests reconsideration and timely withdrawal of the pending claim rejections for the reasons discussed below.

Claim Rejections under 35 U.S.C. §103(a)

Claims 1-4 were rejected under 35 U.S.C. §103(a) as being unpatentable over Mansfield (U.S. Patent No. 6,704,346) ("Mansfield") in view of Sugar, *et al.* (U.S. Patent Application No. 2002/0061031) ("Sugar"). The Office Action alleged that Mansfield discloses or suggests every claim feature recited in claims 1-4 with the exception of "transmitting a dummy packet." The Office Action cited Sugar as allegedly curing the deficiencies of Mansfield.

Claim 1, upon which claim 2 is dependent, recites a method of operating a frequency hopping spread spectrum. The frequency hopping spread spectrum includes a central node and a plurality of dependent nodes configured to communicate over a time division duplexed frequency hopping channel. A plurality of alternate time-wise frequency/time slots are allocated for central node and dependent node transmission. A first dependent node is not permitted to transmit in a frequency/time slot which immediately succeeds, time-wise, a frequency/time slot in which the central node is configured to transmit to a second dependent node. The method includes maintaining a black-list of worse-performing frequency bands for the time division duplexed frequency hopping channel, and transmitting a dummy packet in a frequency/time slot immediately preceding, time-wise, a frequency/time slot allocated for the dependent node transmission at a black-listed frequency band to prevent dependent node transmission at the black-listed frequency band.

Claim 3, upon which claim 4 is dependent, recites a Bluetooth node. The Bluetooth node includes maintaining means for maintaining a black-list of worse performing frequency bands, and transmitting means for transmitting a dummy packet in a frequency/time slot immediately preceding, time-wise, a frequency/time slot allocated for a slave node transmission at a black-listed frequency band.

As will be discussed below, Mansfield in view of Sugar fails to disclose or suggest every claim feature recited in claims 1-4, and therefore fails to provide the features of the claims discussed above.

Mansfield is directed to a Bluetooth™ (BT) device having improved RF interference characteristics for use with at least a pair of RF transceivers, e.g. a master and a slave, which communicate using a packet transfer protocol in a frequency hopping scheme, wherein the packets may be of various lengths, wherein each frequency occupies a frequency channel slot in a RF band, and wherein a subsequent frequency is known. Mansfield further discloses that the master device may have some control over the allowed packet types, e.g. data-medium rate or data-high rate, used by the slave devices with which the master device communicates. The BT device includes (1) a modified frequency selection box 32 which provides a "look-ahead" capability to determine and store the next few "future channel frequencies" to be selected; (2) a channel frequency blacklist table 36 containing a list of BT channel frequencies known to have interference; and (3) an interference avoidance mechanism 42 having an interference avoidance algorithm 44, which uses the blacklist table 36 and the "future channel frequencies" to dynamically adapt the chosen BT packet type 46 among data-medium or data-high rate packets. (Mansfield, Abstract; col. 6, lines 38-49; col. 7, lines 47-66)

Sugar is directed to an interference mitigation or collision avoidance system and procedure to allow different wireless local area network communication protocols to co-exist in the same frequency band, e.g. transmission of signals A and B from Node A and Node B, respectively, to a multi-protocol wireless communication device with no interference. Sugar further discloses a Carrier Sense Multiple Access (CSMA) used to arbitrate wireless network access by having nodes first determine that the wireless

network is inactive before transmitting. For example, the device may transmit useful data on a downlink to one or more nodes operating over signal A, while protecting an uplink transmission of protocol signal B. In the event that the device has no useful data to transmit to Node A, the device creates a dummy packet containing no useful data for its nodes, but serves the purpose of keeping Node A from transmitting an uplink signal. (Sugar, Abstract; page 1, paragraph [0007]; pages 4-5, paragraph [0057])

The Office Action fails to establish a *prima facie* case of obviousness. Specifically, the Office Action fails to explicitly identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements of Mansfield with the elements of Sugar in the manner claimed. The Office Action improperly concludes that the combination of Mansfield with Sugar would have been obvious "in order to improve system throughput and reliability of the wireless networks" without substantiating such a conclusion. Further, one of ordinary skill in the art at the time the invention was made would not have found the combination of Mansfield and Sugar obvious because incorporation of the teachings of Sugar into Mansfield would require substantial reconstruction or redesign of the elements of Mansfield to arrive at the claimed invention.

Assuming *arguendo* that the prior art elements could be combined, the combined prior art elements do not disclose or suggest all of the claim limitations. As noted by the Office Action, Mansfield fails to disclose or suggest "transmitting a dummy packet in a frequency/time slot immediately preceding, time-wise, a frequency/time slot allocated for

a dependent node transmission at a black-listed frequency band to prevent dependent node transmission at the black-listed frequency band," as recited in claim 1, and similarly recited in claim 3.

Rather, Mansfield utilizes the modified frequency selection box 32, the channel frequency blacklist algorithm 40, and the channel frequency blacklist table 36 to dynamically adapt the different BT packet lengths to avoid transmission on the blacklisted channel frequencies (Mansfield, col. 7, lines 38-42 and 48-67).

Sugar, however, fails to cure the deficiencies of Mansfield. Specifically, Sugar fails to disclose or to suggest at least "transmitting a dummy packet in a frequency/time slot immediately preceding, time-wise, a frequency/time slot allocated for a dependent node transmission at a black-listed frequency band to prevent dependent node transmission at the black-listed frequency band."

Rather, Sugar discloses the CSMA used to effectively hold-off or delay Node A or Node B from transmitting to prevent an overlap of the spectrum of protocol signal A with the spectrum of protocol signal B. The device transmits useful data, or creates a dummy packet in the event that the device has no useful data, on a downlink to one or more nodes operating over signal A to prevent Node A from transmitting an uplink signal, which may interfere with an uplink signal from Node B. The downlink signal is transmitted prior to the period of temporal and spectral overlap to keep other nodes in the network from transmitting (Sugar, paragraphs [0055]-[0057]). Thus, Sugar fails to disclose or suggest "transmitting a dummy packet in a frequency/time slot immediately preceding, time-wise,

a frequency/time slot allocated for a dependent node transmission at a black-listed frequency band to prevent dependent node transmission at the black-listed frequency band," as recited in claim 1, and similarly recited in independent claim 3 (*emphasis added*).

Accordingly, Mansfield in view of Sugar fails to disclose or suggest every claim feature recited in claims 1 and 3. Therefore, the Office Action fails to establish a *prima facie* case of obviousness under 35 U.S.C. §103(a).

Claims 2 and 4 depend from claims 1 and 3, respectively. Accordingly, claims 2 and 4 should be allowable for at least their dependency upon an allowable base claim, and for the limitations recited therein.

New Claims 5-7

Claim 6 has its own scope, but contains recitations similar to those discussed above with regard to claims 1 and 3. Specifically, Mansfield in view of Sugar fails to disclose or suggest at least "wherein the master node is further configured to transmit a dummy packet in a first frequency/time slot immediately preceding, time-wise, a second frequency/time slot allocated for a dependent node transmission at a black-listed frequency band" as recited in claim 6.

Claims 5 and 7 depend from claims 1 and 6, respectively. Accordingly, Claims 5 and 7 should be allowable for at least their dependency upon an allowable base claim, and for the limitations recited therein.

Accordingly, Mansfield in view of Sugar fails to disclose or suggest every claim feature recited in claims 5-7; therefore, claims 5-7 should now be in condition for allowance.

CONCLUSION

In conclusion, Applicants respectfully submit that Mansfield and Sugar fail to disclose or suggest every claim feature recited in claims 1-7. The distinctions previously noted are more than sufficient to render the claimed invention unobvious. It is therefore respectfully requested that all of claims 1-7 be allowed, and this present application passed to issuance.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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Enclosures: Amendments to the Abstract